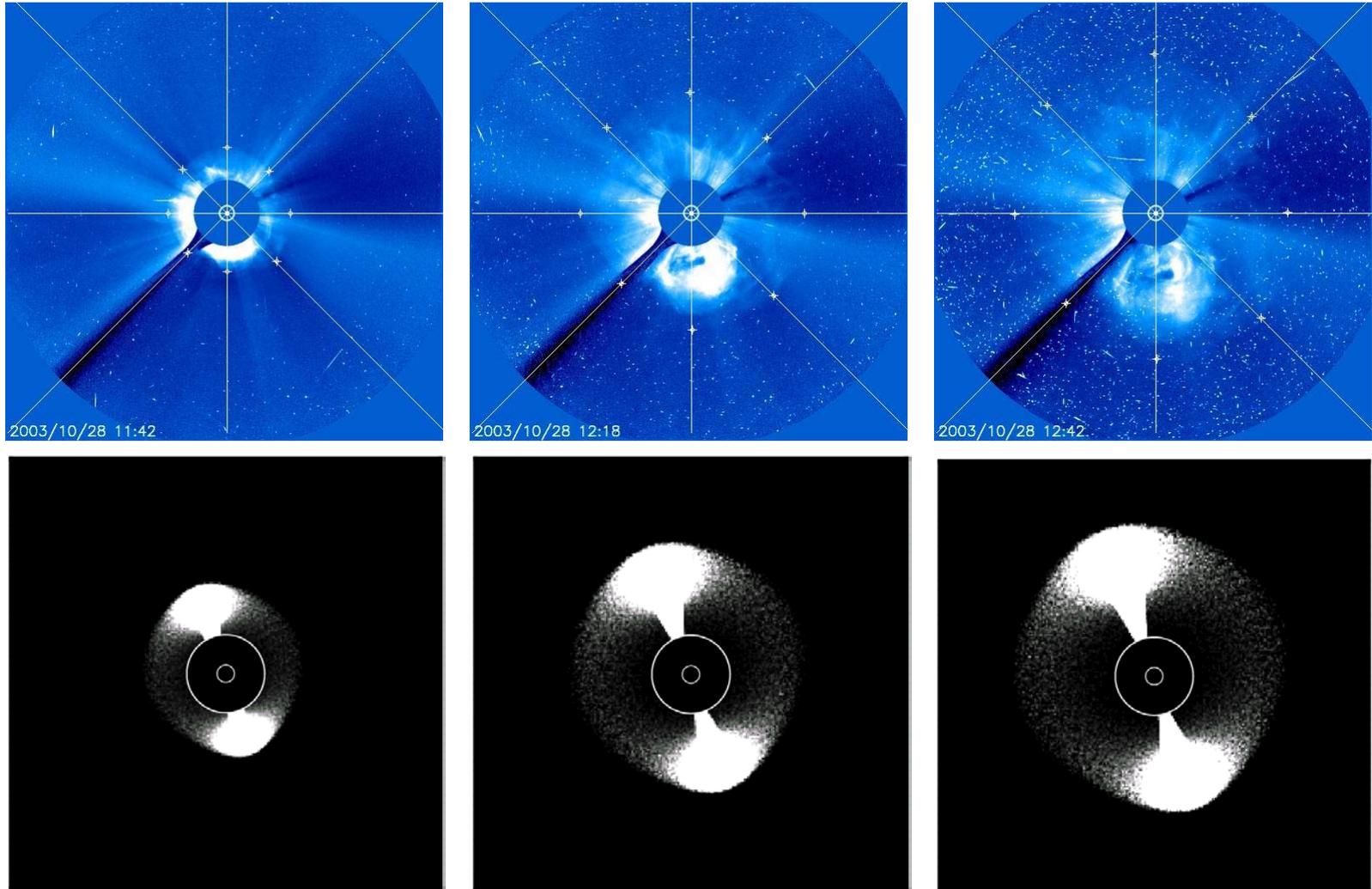


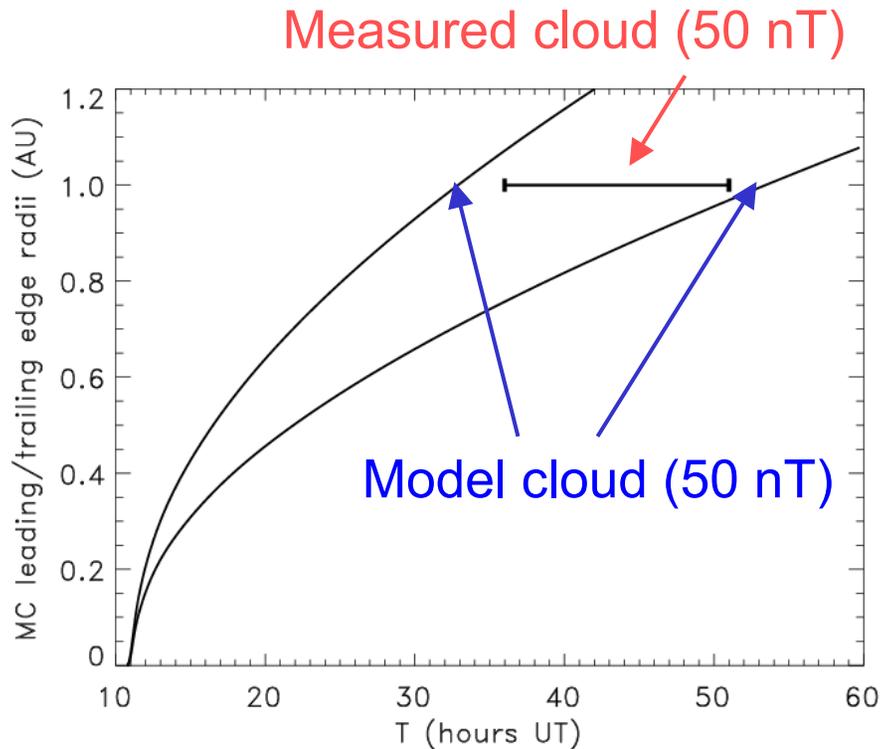
Measurement and modeling of Geoeffective CMEs

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Measured CME points (above) and model CME images (below) for 10/28/2003 CME

CME event: October 28, 2003



This extremely fast halo CME (coronal mass ejection) caused numerous problems for astronauts, satellites, power grids and airlines. For example, the FAA issued its first-ever alert on radiation doses for aircraft above 25,000 feet.

The previous slide shows that we can simulate the dynamics of this CME near the sun.

The plot to the left shows we can model the transit of the resulting “magnetic cloud” to the earth.

This simple physics-based numerical model runs in a few minutes on a desktop PC. Our goal is to predict magnetic cloud parameters at the earth, based on near-sun observational inputs.